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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,412	03/31/2004	Cynthia S. Bell	42P17096	7949
8791	7590	08/09/2005		EXAMINER
				TRA, TUYEN Q
			ART UNIT	PAPER NUMBER
				2873

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/815,412	BELL ET AL. 	
	Examiner	Art Unit	
	Tuyen Q. Tra	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 May 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 7-14, 16-20, 22, 24-29 and 32-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 13, 14, 16-19, 28, 29, 32, 39, 40 and 43 is/are allowed.
- 6) Claim(s) 7, 9, 10, 12, 20, 22, 24-27 and 41 is/are rejected.
- 7) Claim(s) 8, 11, 33-38 and 42 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 31 March 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The indicated allowability of claims 7-12 and 23 are withdrawn in view of the newly discovered reference to Flander et al. Rejections based on the newly cited reference follow.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 12 recites the limitation "the optical overlayer" in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 12 should be dependent on claim 11.

4. Claim 20 recites the limitation "the first array" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 20, 22, 24-27 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kastalsky (U.S. 6,288,824 B1) in view of Flanders et al. (US Patent 6,671,078 B2).

a) With respect to claim 20, Kastalsky discloses a display device based on grating electromechanical shutter in Figure 2 comprising of a substrate (item 30) having a first array of active surfaces (item 33) corresponding to one of an ON state or an OFF state with respect to incident visible light; a second array of active surfaces (item 41), each active surface (41) corresponding to an active surface (33) of the first array, the surfaces of the second array corresponding to the other of either an ON state or an OFF state with respect to incident visible light; and an array of electromechanical actuators (item 42), each corresponding to a surface of the second array, to move the surfaces of the second array (41) to alternately cover or uncover an active surface of the second array, the incident light striking a surface of the first array when the surface of the first array is uncovered and the incident light striking a surface of the second array when the surface of the first array is covered (see Fig. 6).

However, Kastalsky et al. does not disclose an array of through holes through the substrate, the through holes being transparent to visible light. Within the same field of endeavor, Flanders et al. discloses an electrostatic zipper actuators optical beam switching system and method of operation in Figures 1A, 1B and 2 with teaching of an array of through-holes (item 116) through the substrate (item 105) using actuators (item 118) to open and close array of active surfaces (114).

It would have been obvious, therefore, at the time the invention was made to a person having skill in the art to construct the optical device with acoustic lens system such as disclosed by Kastalsky, and with an array of through-holes (item 116) through

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the substrate (item 105) using actuators (item 118) to open and close array of active surfaces (114) such as discloses by Flanders et al. for purpose of switching light.

b) With respect to claims 22 and 24-27, Flander et al. further discloses in Figures 1A, 1B and 2 wherein the surfaces of array are reflective and correspond to an on state and wherein the hole (116) correspond to off state; wherein the actuators each correspond to a surface of the array, for translating the surfaces to alternately cover or uncover the respective hole (116); for rotating the surfaces about a remote pivot point to alternately cover or uncover the respective hole (116); an optical overlayer proximate the array of active surface to direct incident light to the active surfaces.

c) With respect to claim 41, Flanders et al. further disclose wherein the array of active surfaces each comprised a first portion to reflect a first color band of visible light, and a second portion to reflect a second color band of visible light.

4. Claims 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flanders et al. (US Patent 6,671,078 B2), in view of Kastalsky (U.S. 6,288,824 B1).

a) With respect to claim 7, Flanders et al. discloses in Figures 1A, 1B and 2 a substrate (item 105) having an array of through holes (item 116), the through holes (116) being transparent to visible light; an array of micromechanical optical modulators (item 100) on the substrate (105), each optical modulator being proximate a respective one of the through holes (116), each modulator (100) having a first position (position in Figure 1B) to allow incident visible light to pass through the respective through hole (116) and a second position (position in Figure 1A) to prevent incident visible light from passing through the respective through hole (116).

However, Flanders et al. does not disclose at least one color constituent of a video signal and electronic control system for operating the optical modulator the optical modulators in accordance with a received video signal. Within the same field of endeavor, Kastalsky discloses one color constituent of a video signal and electronic control system for operating the optical modulator the optical modulators in accordance with a received video signal (col. 5, lines 24-27).

It would have been obvious, therefore, at the time the invention was made to a person having skill in the art to construct the optical device with acoustic lens system such as disclosed by Flanders et al., and with one color constituent of a video signal and electronic control system for operating the optical modulator the optical modulators in accordance with a received video signal such as discloses by Kastalsky for purpose of controlling light.

b) With respect to claims 9 and 10, Flanders et al. further discloses wherein each optical modulator (100) comprises an opaque portion (item 114) and wherein the incident light is not incident on the optical modulator in the first position and the incident light is incident on the opaque portion (114) in the second position (position in Fig. 1A), where portion (114) is reflective.

Allowable Subject Matter

5. Claims 13, 14, 16-19, 39, 40, 28, 29, 32 and 43 are allowed.

The reason for the indication of allowable subject matter is that (claim 13) the second portion comprising an angled mirrored surface to reflect incident light away from direction from which it came; (claim 28) a substrate having an array of through holes,

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each hole being proximate a respective active substrate, the through holes being transparent to visible light, and wherein one of either the first or second portions of the active surfaces is transparent to visible light to allow the incident light to pass through the respective through hole.

6. Claims 8, 11, 33-38 and 42 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reason for the indication of allowable subject matter is that (claim 8) wherein each optical modulator comprises a transparent portion and an opaque portion and wherein the incident light is incident on the transparent portion in the first position and the incident light is incident on the opaque portion in the second position; (claim 11) an optical overlayer proximate the array of optical modulators to direct incident light to a respective one of the through holes; (claim 38) wherein the second portion comprises an angled mirrored surface to reflect incident light away from the direction from which it came; (claim 42) wherein the array of active surfaces each comprise a first portion to reflect a first color band of visible light, and a second portion to reflect a second color band of visible light disclosed in the claims is not found in the prior art.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyen Tra whose telephone number is (571) 272-2343. The examiner can normally be reached on Monday to Thursday from 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps, can be reached on (571) 272 - 2328. The fax number for this Group is (703) 872-9306.

TT

July 26, 2005



Georgia Epps
Supervisory Patent Examiner
Technology Center 2800